Fig 3. Annotated sequence of the paralogue cluster

80	160	240	320	400	480	260	640	720	800	880	960	1040	1120	1200	1280
l 80 ccgaccgccg	gtcaggcgga	gccgccgagt gcctccaccc ggtcggtgag gccgacgagg 240	cgcggatgcc gacgtggagc cgtccgtccc gggtggccac 320	ttggtcaggg cctcggagac ggcgtagtac gcggcggtct 400	ccggaccggg atggcggagc gccgggccag ggccttgagc 480	tgccccgggc gacctcccgg agttcgtcga cggcggcggc 560	teggegtega geggeacega cagttgeaeg gtgegeaeee 640	caggtegegt tegataegge ggegggeggt gteggeggeg 720	tctccgcgtt ggcgatggcg gtggccacca gttcggtgaa	tegiteateg aegecaeget gagegegeee caeagitgie	ccactccttg ccgacgacgg aggccgggcc cgaggacacg 960	acaccagggt gtgcacattc cggccgccgg gcggtacctg 1040	gcgacataca gggcggttcc gttgggctcg taacggccga 1120	ggcgaccgcg gcgaacact ccttcggcgg tgccgccgc 1200	eggeggeece eegeagetee acaegtgeet gggtgttege 1280
l 70 ctgccgggtg	gaggggcagt	ggtcggtgag	cgtccgtccc	ggcgtagtac	gccgggccag	agttcgtcga	cagttgcacg	ggcgggcggt	gtggccacca	gagcgcgccc	aggccgggcc	cggccgccgg	gttgggctcg	ccttcggcgg	acacgtgcct
60 ggtagtcccc	cctgctgggt	gcctccaccc	gacgtggagc	cctcggagac	atggcggagc	gacctcccgg	gcggcaccga	tcgatacggc	ggcgatggcg	acgccacgct	ccgacgacgg	gtgcacattc	gggcggttcc	gcgaacacct	ccgcagctcc
50 gccgctagct	tecgaeggtg	gccgccgagt	cgcggatgcc	ttggtcaggg	ccggaccggg	tgccccgggc	teggegtega	caggtcgcgt	tctccgcgtt	tegtteateg	ccactccttg	acaccagggt	gcgacataca	ggcgaccgcg	აააანნანნა
10 20 30 40 50 60 70 80 80 1 ccatgggagc agcatcgcag tgcgcctcc cggccgccat gccgctagct ggtagtccc ctgccgggtg ccgaccgccg 80	stop sensor gteggtgtge	gccgcagttg	cggccgtcgt	cttggcggcg	ggatgtcgag	gccgggtgga	gatcagctcg	ggccgtcgtg	gccgcctgcg	catcggcttg	cgcggaatcc	cccgactcga	ggtccaggcg	cggcctcggc	gcctgctcct
l 30 tgcgcctccc	gccggatcta	161 tggtggttcc cgcgccgggc gggctgtgca gccgcagttg	241 cccgagcccc ggcagggggc ggcgccaccg cggccgtcgt	321 atggacgtcg acgacggtgg caccggagtg cttggcggcg	401 cgaccggttc ggggtggcgt tccccggtct ggatgtcgag	481 gccgggcgga gtccgccctc ggcgagtacc gccgggtgga	561 cagcccgtcg gtcacctcgt cgagctgccg gatcagctcg	641 gcagcgccag ggagaccagg cgctgttggg ggccgtcgtg	721 gcgacgatcc gggcccgtga cgcggtgagg gccgcctgcg	801 geeggeeage eggteetegg tgteegaegg eateggettg	881 cgtcgacgtt gatcggcatg cacaccgtgg cgcggaatcc	961 geogogtagt egtegateeg egeegggeag eeegaetega	1041 gataccggcg ggaaaatcac ggccggtcct ggtccaggcg	1121 ggaccgcgaa gtcggccgag aggagctgtc cggcctcggc	1201 gcgaccaggg tcgccacgcg ccgcagcgcc gcctgctcct
20 agcatcgcag	gggtgcggcg	cdcdccdddc	ggcagggggc	acgacggtgg	ggggtggcgt	gtccgccctc	gtcacctcgt	ggagaccagg	gggcccgtga	cggtcctcgg	gateggeatg	cgtcgatccg	ggaaaatcac	gtcggccgag	tegecaegeg
10 ccatgggagc	gggcggtccc	tggtggttcc	cccgagcccc	atggacgtcg	cgaccggttc	gccgggcgga	cagcccgtcg	gcagcgccag	gcgacgatcc	gccggccagc	cgtcgacgtt	gccgcgtagt	gataccggcg	ggaccgcgaa	gcgaccaggg
Н	81	161	241	321	401	481	561	641	721	801	188	961	1041	1121	1201

1681 GCGAACATCT GTTCCGGTGG GGTGGCCCTG GCCACCAGGG TCGCCACCCG TCGGAGTGCC GCCCGCTCCT CGACGATCTG 1760 sensor kinase 4 1761 TTCGCACGGC CCAGGGCC CJACCGCCC GATGACGGCC GCATACCGGC TATCACGCA CATCAGGATG 1840 ACGCAGGAAA GATCGGATAC GCAGTGTACG AGTGCAGCGA 2320 2321 IGAGGITCGI CACGACGICC CCGGCCTGCC GGGTCCGTCA CCGTCCATCA CCGTCCTGGG CIGTCTGGGC GIACGCGCCC 2400 2401 ACGGCCGGAA ACTGGAGCTG GGCCCTCCGC GTCAGCGGGC CGTTTTCGCC CTGCTGCTCA TCAACGCGGG CAGTGTGGTG 2480 1281 gatggcggtg gccacgaggt cggtgaaacc ggccagccgg tcctcggtgt cgggcggcag cggttccgcg gtcagcgaga 1360 cggcacgccg acgaccgaac cGAAGCCGCG CGCCCTGGCG 1440 2001 CAGCGGTTCG GGTTGGTGGG AAGGGATGTT GGCCGCTGGC GGCGATGCGG AAGCCGATCG TTCCCAGTAC TTCTGGGAAG 2080 2161 CCGGCGAAGG AGCIGCCGIG ICGGACGICI ICGCAICCGA GAAGAGIICG CCCGGIGICC GGACCCGCGC GGCAACGICC 2240 2481 CCGGTCGACt ogatogicti cogiaicigg ggcaacteae caecgggoge ggicaecgog aegeiceagi eciaigigie 2560 1411 AAGTCGGCGG GTGCCCCGGA CGACTCGGCG GCGTCGTCGA TCCGGGCCGG CCGCCCCGTC TCGGACACCA GCGTCACCAC 1520 1601 TCGCCATGCC GTCCGGATCG AGCCTGATGA TTCCGGTCAC ATCGTTGCCG AGCAGTTCTC CGACTTCGGC GGCGACCGTC 1680 1841 ACGTCCGCCG TGAACGCCCG TCAACGTGGC CCGCCGGAGT CGGGAACACG CGTCCGGAAT CAGCCCCCGG AACGGCGGGA 1920 GAATCCGCCC TGACCTCGGG AGTTTGCAGC TAGCTGGAAT 2000 1521 GTTCCGGCCG TCGGGGTCCA CCCGGGTGCC GATGGGGAAG AGCGGGCCGT GCAGACTTCT GGACCAGCCG CCGACGGCGC 1600 GACGACGCTG CGGGTTCTCC ACGGGGAGA GATCCGCGAA 2160 1921 CCGTCTTCCT CCGTCCGGCG CGGGCACTG CGCCGCGGCG 2081 recercece AGAGTCGGTC CGCTTCCCCG AGTGGGCCGC 2241 CCACCGCGCT CTGTCATCAG CGCCGTCGGC GCCGTCAGCC 1361 tegecateat caegeceeae ageegteeet egaegttgat

3b/3

3761 ctggccgtgg acgaccgtgc tgcggcatct gtacgcgatg tggccggaac gtatgcacgg attccccggt tggctgcggc 38403841 gegeactege ggaaetgett eeegaaggtgg geeeggagee aeaggggeeg eacteeeeeg aegggggega ggagaaeage 3920 ggttcgacac ccgaactgct gcaccagccg ccgggctaca 2640 tgagcaggcc atcaggacag ggcgccggct ctcgcgcgag 2720 tgctgagctg gggcgggaca ccgtacgagg agctgagcgc 2800 ctccggctgg gcgccgtgga gacatgggcg cactgctgtc 2880 GCCGGAGGTG CAGCGCAATC CGCTGCGGGA GCGGCTGATC 2960 CGGACGCGCT CAGGACGTAC GAGGCGACGC GGCGGGCCCT 3040 GCGCTGCACG CGGCGATCCT GCGTCAGGAC AACGGTCTGG 3120 3201 TCGAGGCCGT TGACGCGGCC GGTGGCGGGG CGGGCGCGGG TCCCGGGGGC GATGACGGTG GCGGCGGCG CGGGGGCGCG 3280 GGCTCCGGCT CCGGCTCCGG CTCCGCTCCT GCGTCGGTTC 3360 3361 CCACCTICIT TCCCGGCICC GITTCTGGCT CGGCGICCGT TGCCGCGTCC GIAGCCGCGC CCGTITCCGG CCAIGTCTCC 3440 3411 GGGCCCGGGT CCGCTTTCGG GTCCGTGGCG CTCCACCGGC CGCAGACCCT CCGGGGCGAG CCGGTCCACG GGGGCGCGA 3520 3321 GGGGAIGCGC ACCGGGCAGG IGTICCCCAC GCIGCCGCG TICGICGGGC GCGGCGACGA GCIGGGGGGT ctgctggagt 3600 3601 ccgcgacgtc cgcgttccac acctcggggc gggtggcgtt cgtcgtcggc gaggcgggca gcggcaagac ccggctcctc 3680 3681 tecgagttgg agegeteggt teeggaeagt gtgegeaeeg tetgggegte etgtteggag agtgaggaee ggeeegaeta 3760 2561 ccggctgcgg aaactcctgg ccgagtgtgt gctcccggac 2961 GGGCAGCTCA TGCAGGCGCA GTACCGGCTG GGGTGCCAGG 3041 GGCCGAGGAG CTGGGGACCG ATCCGGGCAA GGAGCTGGCG 3281 CCCGGGGTCC GCCTCCGGCT CCGTTTCCGC GTCCGTTTCC 2801 gtacgacttc gccgtccagg aggccaatcg gctggagcag 2881 tgcggctggg gcgggacgag gaggTGATGG ACCAGCTCAA 2641 ccctcgcgct cggcaccgag cacatcgacg cgaaccgttt 2721 gagcacc aggaggcgcg ggccgtgctc tgccaggccc

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5200	ACCTATCTCG	GGCTGCACCG TACGGGACAC CGAAGGGCGC ACCTATCTCG 5200	TACGGGACAC	GGCTGCACCG	CICCGGCCGC	5121 ccessccsc sassaccs ccsrrcrsr crccssccs	GAGGACCGCA	၁၅၁၁၅၅၅၁၁	5121
5120	CGGTCCTGCC	ATGTTCCACC	cececccar	TCGCGGCGGA	ecereecrec	5041 GAGCCGCGCC CGGACCCGGG CGCCGAGGCC GCGTGGCTGC	cecacccees	GAGCCGCGCC	5041
5040	CACCCGTTCC	TCCCCACGCG CGTCCCGGGA CCCGTCCCGG CACCCGTTCC	cercceeea	TCCCCACGCG	CCGACGCACC	4961 cecedroce cacceacco eaeccecero cogacecaco	cacccaccc	ceceerccee	4961
4960	GATACGTACC	GAGGAGCCCC CATTGGACAC GTACGCAGCG GATACGTACC 4960	CATTGGACAC	GAGGAGCCCC	ACGGCCCACC	4881 GGGGGGGCC GTGGCCGGTC GCGGCCCCC ACGGCCCACC	GTGGCCGGTC	ວວອອວອອວອອ	4881
4880	ACACTGGGCG	ACGCGCAGCC GGGTGCAAGG GGCGGTGCCG ACACTGGGCG 4880	GGGTGCAAGG	ACGCGCAGCC	GGGCAGCCGG	4801 GGGCTCCCCG ACGCCGGGCT TGATCCCCCG GGGCAGCCGG	ACGCCGGGCT	ececicccce	4801
4800	CGGCGCTTGC	gtecegggee eeggggteet egGCGGCGGG CGGCGTTGC 4800	ccggggtcct	gtcccgggcc	cacggtctga	4721 gtecegttee teegegeteg gggegetgge caeggte <u>tga</u>	tccgcgctcg	gtcccgttcc	4721
4720	gtcggcccgt	aggccgtctg ggacgacctg gagaacaccc gtcggcccgt	ggacgacctg	aggccgtctg	catccg ctggtccggg	4641 gaccccgggc ggctgaggtt cgtgcatccg ctggtccggg	ggctgaggtt	gaccccgggc	4641
4640	agacccgac 4640	tacggcggtc cgcggcggtc tgctggagga	cgcggcggtc	tacggcggtc	agaacgtccg	4561 ccgtgctgcg ccatgaggga atcccgctgg agaacgtccg	ccatgaggga	ccgtgctgcg	4561
4560	gtgatcgaga	gcggtcgtgg agcgcagttg cgaacggcgt gtgatcgaga 4560	agcgcagttg	gcggtcgtgg	cgacatctgc	4481 gagcgtgccg cccgccgtgc gccggggtgct cgacatctgc	cccgccgtgc	gagcgtgccg	4481
4480	aacggctgtc	teceggaega getggeeggg gtegtgetge aaeggetgte	gctggccggg	tcccggacga	gagacggaga	4401 tegeteegge aggggetege egeegeetgg gagaeggaga	aggggctcgc	tegeteegge	4401
4400	gctcctccgc	ctccgccggg aacccgtact tcctcgtcca gctcctccgc 4400	aacccgtact	ctccgccggg	tgcacgagcg	4321 aggeceegga cacetecte gtaegggeee tgeacgageg	caccctcctc	aggccccgga	4321
4320	atgctgggca	gcacgggcca ccggggaact cgccggaggg atgctgggca 4320	ccggggaact	gcacgggcca	cgccctggac	4241 gtcgaccggc gcgcgcggg tcctgctgaa cgccctggac	გნნაანანან	gtcgaccggc	4241
4240	tgatcctcca	acgacgccga gctgcgacgg gccgccgccg tgatcctcca 4240	gctgcgacgg	acgacgccga	cggctcgcgc	ctgctgctcg tggtcaccac gcgcaccttc cggctcgcgc	tggtcaccac	ctgctgctcg	4161
4160	caccgtcccc	cctgctgcgc ctcctggtgg agcaactgcg caccgtcccc	ctcctggtgg	cctgctgcgc	cctcgctcgc	4081 tgctggagga catggagcgg gccgacgccc cctcgctcgc	catggagcgg	tgctggagga	4081
4080	gtggtgatca	caggogotto tgogcacggt cogogaacco gtggtgatca 4080	tgcgcacggt	caggcgcttc	cgccgtgtgc	4001 ctccagagag gctcgtttca ccctgcacga cgccgtgtgc	gctcgtttca	ctccagagag	4001
4000	ნანააააანა	cgcacaccet cacgetegeg ecegeteteg egeeeeegeg 4000	cacgctcgcg	cgcacaccct	agcacccgg	3921 ggcaacgggg acggtgcggg cgacggggac agcacccgg	acggtgcggg	ggcaacgggg	3921

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U.S. Serial No. 10/552,571 Attorney Docket No. PB60213

REPLACEMENT SHEET

5201 ACGCCTCGTC GGTGCTCGGA CTGACCCAGA TCGGCCATGG ACGTGAGGAG ATCGCGCAGG CCGCCGCAG GCAGTGCGG 5280 5281 ACACTCGGTC ACTTCCACAC CTGGGGCACC ATCAGCAACG ACAAGGCCAT CCGACTGGCC GCGCGCCTCA CCGACCTGGC 5360 GGCGAGGGCG TCGAGATCGC CCTGCGCATG GCCCGTTACT 5440 5441 TCCACCACCG CACCGGCAGC CCGGAGCGCA CCTGGATCTT GTCGCGCCGC ACCGCCTACC ACGGCATCGG CTACGGCAGC 5520 5521 GGTACGGTGT CGGGGTCGCC CGCCTACCAG GACGGGTTCG GCCCGGTGCT GCCCCATGTG CACCACCTCA CGCCGCCCGA 5600 5601 CCCGTACCAC GCCGAGCTGT ACGACGGCGA GGACGTCACG GAGTACTGCC TGCGCGAACT CGCCCGCACC ATCGACGAGA 5680 5681 TCGGCCCCGG GCGGATCGCC GCGATGATCG GGGAGCCGGT CATGGCGCG GCGGCGCCG TCGTCCCGCC GCCGGACTAC 5760 5761 TGGCCGCGC TCGCCGCCT GCTGCGCTCC CACGGCATCC TGCTGATCCT GGACGAGGTC GTCACCGCGT TCGGCCGCAC 5840 5841 GGGGACCTGG ITCGCGGCCG AGCACTTCGG GGTGACCCCC. GATCTGCTGG TGACCGCGAA GGGCATCACC TCCGGGTATG 5920 5921 TCCCGCACGG GGCGGTGCTC CTGACCGAGG AGGTCGCGGA CGCCGTGAAC GGGGAGACGG GGTTCCCGAT CGGCTTCACC 6000 6001 TATACCGGTC ACCCCACGGC GIGCGCCGTC GCGCTCGCCA ATCTCGACAT CATCGAACGG GAAGGGCTGC TGGAGAACGC 6080 6081 GETGAAGGTG GGCGACCACC TCGCCGGGCG GCTGGCGGCC CTGCGCGGGC TGCCCGCCGT GGGGGACGTC CGGCAACTGG 6160 6161 GCATGATGCT CGCCGTCGAG CIGGTGTCGG ACAAGACGGC CCGCACCCCG CTGCCGGGCG GCACCCTCGG GGTCGTGGAC 6240 6241 GCGCTGCGCG AGGACGCGGG CGTCATCGTC CGGGCCACGC CGCGCTCCT GGTCCTCAAT CCGGCGCTCG TGATGGACCG 6320 5361 GCCCCAGGGT CTCCAGCGCG TCTACTTCAC CAGCGGCGCC

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6400	6480	6560	6640	6720	6800	6880	0969	7040	7120	7200	7280	7360	7440	7520
೨೦೨೨೨೨೨೨೨	GCGCCTTCCC	TCCTCCCTCC	сессесссвя	CGCGTGCACC	CGCCCCGGTG	GGGCGTGGT	Crecrecce	GICCCGIGIC	TGGGCACCGC	GGTACGGGCC	CGACGACATC	CGGCCGTTCT	CTGGTCAGGG	GCAGGCCGGG
CGGGCGGATC	GGCCGACCCG	GCTCGGGCGC	GGTGGGAGAC	CAGAGGGTTC	ದಲಿಲಿಲಿಲಿಲಿ	GGGATCGCCC	GGTGCGCCAT	GGTATCCGAT	ссесссетес	CAAGGGCCCG	CCGTCGTCCT	GGCGACACGG	GGCGCTGGAC	ACGACACCGA
CTGCGGCGC TGCCACCCGA CGGCGGATC GGCGCGCCC 6400	GGGCGCCGGG TCGGCACAGC GGCCGACCCG GCGCCTTCCC	rescecerse ecereceer seressese recreere 6560	CGCCAAGCGC CCCGTGCCAC GGTGGGAGAC CGCCGCCGA	CCGAIGCGIG CCTCTTCGCC CAGAGGGTTC CGCGTGCACC	CGTCATCGCC TCCGACGTTC CCGCGCGGT CGCCGCGGTG	GCCGGGACGC GGTCGCCGAC GGGATCGCCC GGGGCGTGGT	GGGTACGAGG ACGCCGCGA GGTGCGCCAT CTGGTGGCCG	CACGGGACCC GICGGCGAGC GGIAICCGAI GICCCGIGIC 7040	CCGACTICGA CGCCCGCG GCGCCGIGC IGGGCACCGC	GCGACGCIGA ICGGIGICGC CAAGGGCCCG GGIACGGGCC 7200	CACGGACGCC CAGGTGAGCC CCGTCGTCCT CGACGACATC	rcecccca ceccrccacc eecaacace ceeccerrcr 7360	GAACAGGICC IGGCCGCGCI GGCGCIGGAC CIGGICAGGG	GGTGCGGGTC ACCGGCCCA ACGACACCGA GCAGGCCGGG 7520
CTGCGGCGGC	9990090999	ಗಡಿತ್ತದಂದಾತರ	CGCCAAGCGC	CCGATGCGTG	CGTCATCGCC	GCCGGGACGC	GGGTACGAGG	CACGGGACCC	CCGACTTCGA	GCGACGCTGA	CACGGACGCC	TCGGCGCCGA	GAACAGGTCC	GGTGCGGGTC
	r b													
GGACTCGGTG	CACCGGGGG	GCCGTTCCCG	GTCGAGCCGC	GAAGICCCGT	CGGACCTCGC	GIGCIGCICA	ອອວອວລວອອອ	TGATCGCCTC	TTACCGGGTG	GTGCGGCGAC	CGTTCTTCTG	GGGCTGGGCT	CGTCGCGTTC	CCCTGGTCAC
CGGACGGCT GGACTCGGTG	ceceeccec cacceeeee	ereccceec eccerrcce	ccascscer srcsasccsc	AAGCCGAAGG GAAGICCCGT	GGGTCCCACG CGGACCTCGC	cececcaar erecrecrea	Acecceedac eeecccecee	AGGGATGTGC TGATCGCCTC	GCGCGGCCC TTACCGGGTG	GGCGGCGCG GTGCGGCGAC	rcgacgcrgg cgrrcrrcrg	CGCCTTCCAC GGGCTGGGCT	GGGTGGACCT CGTCGCGTTC	receeceece cccreercac
GACGAGGTGG CGGACGGGCT GGACTCGGTG	GIGACGAGAC CGCGGCCGC CACCCGCGGG	CGCCTTTTCC GTGCCCCGGC GCCGTTCCCG	CGTTCCCGTT CCAGCGCGCT GTCGAGCCGC	GGAGCCCGGC AAGCCGAAGG GAAGICCCGT	CGGGATCAGG GGGTCCCACG CGGACCTCGC	ceceerreec cececceaer erecreerea	GGCAACGCCA ACGCCGGGAC GGGCCCGCGG	CTGCGACGAG AGGGATGTGC TGATCGCCTC	receeceer ececeeccc rracceeere	CCCACGAICC GGCGGCGCG GIGCGGCGAC	GGACGACCGG TCGACGCTGG CGTTCTTCTG	TCGCGGACCG CGCCTTCCAC GGGCTGGGCT	CTCGCGGGCC GGGTGGACCT CGTCGCGTTC	GGACAGCGGC TGCGGCGGCG CCCTGGTCAC
6321 GGCCACGGCG GACGAGGTGG CGGACGGGCT GGACTCGGTG	scop cymopar 6401 ccceeceege e <u>rea</u> ceaeac ceceeecec cacceege	6481 CGTTTCCCGG CGCCTTTTCC GTGCCCCGGC GCCGTTCCCG	6561 GCTGTGGCGC CGTTCCCGTT CCAGCGCGCT GTCGAGCCGC	6641 ceeececec ceaececeec aaccedaace caacrecer	6721 ACGGICACGC CGGGAICAGG GGGICCCACG CGGACCICGC	6801 TICACCCGIT CGCGGITCGC CGCGCCGAGI GIGCIGCICA	6881 GGTGCTGTCC GGCAACGCCA ACGCCGGGAC GGGCCCGCGG	6961 GGATCGTCGA CTGCGACGAG AGGGATGTGC TGATCGCCTC	7041 CGGCCCATC TGCGGGCGGT GCGCGGGCCC TTACCGGGTG	7121 GGGCGCCCGT CCCACGATCC GGCGGGCGCG GTGCGGCGAC	7201 CGGCGGAGCA GGACGACCGG TCGACGCTGG CGTTCTTCTG	7281 TICCGCCGGG TCGCGGACCG CGCCTTCCAC GGGCTGGGCT	7361 CGCCAACGGG CTCGCGGGCC GGGTGGACCT CGTCGCGTTC	7441 ACGICGICCG GGACAGCGGC IGCGGCGCG CCCIGGICAC

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TCTCCCGGGC GGATCACGAT CCGGGTCGGC GGCCGGGAGG 7680 GCGACCGCGA GGGCGCGGGA CACGGGAGCG 7920 TCGTCCGCT GTCCCCGGCC GCCCTACCC CACCGCTGCC 8000 GCGETTCTCG GCGTTCTCGG CGTCGTCCGC CGCCGCCCCC 8080 resresces esceractes rasascastr cescecesar 8160 GCCGGGGACA CCTCGACCAC GTCGAAGCCG ACGGGCCTGA 8240 8401 GCGGGGGGT GAGCGCCGGG TGAAGTCGGC GGCGGTGACG ATGCTGACGC CGTGCCCGCG CGCGTAGTCC AGGGAGTCGG 8480 8481 GCCGCGGAIT GIGGCCGCGG AIGCCGACCT GGACCAGGCG CICCGGGICC ACCAGGCCCI CITCGAIGGC CCAGCGGAAG 8560 8561 GGGGTGCCGT GGTGGTAGGT GCCGCCGTAG ACGGGTGGGT TGGTGTCGCT GTGCGCGTCC AGGTGCAGGA CGGCGACCCG 8640 751 CGCGTGGGCC GGGCGGTGGT CGACGCGCCG TCGCTGAGGG CCGCGGTGCA CGGCCCGGCA CCCGACTGGG CGCCGGTCGC 7600 CACCGCGTAT CCGCACGGCG GCGAGGTGAC CGTCCATATC 7760 TCCACGGCTG CGACCTCCTG GCGGGGTACC CGCGCCTCGG 7840 GGACAGCCCG CCGGGGGCCG GTGTGCCGGT GCCCGGGGCG 8320 GCGGCAGGCC GCCGACGGTG CGCCGGATCT GCTCGGCGAT 8400 8321 TACGCCGGGT CGACGACGTC GATGTCGACG GAGACGTACA 7601 CGCCGTGGCG GGTGGACACG GGGACGAAGG CCCCGGCCGG 7681 rerrecede eccededad essecede esacecer 7761 GACCTCGGTG TCCCGGGCCG GCGCCCGGC GCGTTCACGG stop orf6par— ▼
7841 CGCCGGCGG GCCTCTGAA CGGGCGCTCC CGGGCGGACG 8001 CGGCGAAGIC CACGGCGTC ICGGCGICCA CCGCGICCAC 8081 GGTGGCAGGG GAGAGTCCAC CGGTGCCGAC GCGGGCGACG 8161 CTCCGCCGCC AGCAGGAGG TGATCCCCGA CGGGTCGTAC 8241 GCTGCCCGAC CACGTCGAGC AGGGTCAGCA CCTCGCGCGA 7921 GGCCCGGTGG TCGATCGGCC ACCGGGCCCG CTCCCGTCGT

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GTGCCTCCGT CGTACGGGGC GCCGACGACC ACCACGTCAT 8960 start orf4par 4—
CGCCGGTTGG GCGTAGCGCG GGGAGACGGC GGTGGACAC 9040 CGGAGCGCCG CACCGTCTCG CCGAAGTCCA CGTCCTCCGG 9440 CGCCAGGTCC ATCGAGAAGG GGCTGAGGTC GATGTCGCCC 8800 GGTCGATGCC GACGCCGTGG ATCAGGCTGG ACTCGTGCCG 8880 TACCGACGCC CGGCCACCCC GTGCGGGCTC CCGTTCCCGT 9120 AATCCCGTTC CCGCGCCCGC GGCGCGTCC GGGCCGCGGC 9200 GTTGCCGCTC TGCGGGCCGG TGCCCGCGCC CACGCCCGCT 9280 TGCCGTTCTG GCCACCGGTG CCGTTCTGGC CGCTCATACG 9360 GCCATGGCGC CCTTGACGGC CGTCACCTCG TCGCGCCGGA 9520 GCCGGACCCC TCGTGGATGC CCAGCTTGGG GCGGGCCACG 9600 9681 GAGGGAGACC AGCGCGTCCA GGACCGCGCG GTCCCAGTAC GGGTGGGTGG TCCACTTCCC GGCGATGCCC GCGAGGACGG 9760 AGCGAGTGGT CCCCGCCCAG CATCAGGAAC GCGTCGTTGC 8720 CCCACTTGTC GGTGCCCCGC CGGCGTTTGA GCCCGGGTTC 9680 9601 GICICGGGGG GCAGCAGGCC GGAGAGGGCC IGCCGCAACA 8641 GCCGTGCCGG GCGTGCACGG CGCGCAGGGC GGCCAGGGAG 9041 creeccerro codececaco ceccoreor cocerrocce 8721 GTTCCAGGAG CCGGGTCAGG GCGACCGTCG CGGTGTCCAT 8801 CCGTCGACCA CGTCGATCCG GTCGAAGACC CCTGGGCCCC 8881 GATGGCGCGC GGCGCGAACC GCGCGGGG CCGGTAGCTG 8961 GCCCGATCGG GTCGGGCCGG TGGCGCAGCC GCATGAAGGT 9121 GCCGACCCCC GTTCCCGAAC GGGCTCCCGT TCCCGCGTGG 9201 rececerce receasace erecrecer recreeges 9281 GCACCGTCCG CGCCGCCC GGTGCCGTTG CCGCCGCGG orf3par 9361 ACCACCCGGC CCTGGAGCCT GAGCCTGCGC ACCGCGTCGA 9441 CGGCACCGTG TCGATGACCA CCGCGTCGTA CAGGCGCCGT 9521 recerrege gaggaggagr ecggreacg egerggregr

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9840	9920	10000	10080	10160	10240	10320	10400	10480	10560	10640	10720	10800	10880	10960	11040
GGCCGTGCGC	GCCGGTAGAG	AGTTCCCTGA	GTCGAACTCG	CCCCGGAGTC	AGGCGTTCGC	ccreeceere	Teececece	AGCCCCGTCA	GTCGGTGAGC	GTTCGGCGTC	AGCAGCCGGA	GGTGCCGTCG	ອອອວລອວລອວ	rcdacegree	CGGCCGAGTC
ACCAGAGCGA	Grercaagee	CGCCCAGGGC	AGCGGGCCGC	GCGGCGACTC	ceccereece	TGCGGACCGC	ວວວອວວອວວວ	GGCGGCGCTC	CGGTGGAGGC	GCCAGCAGCA	GCCCGCCAGG	GCGGGTACGC	ວອອອອວວອວວ	GAACTCGTCC	CAGGAACGGG CGGCCGAGTC 11040
CGCGATCTCG TCGTCGAGGG ACCAGAGCGA GGCCGTGCGC 9840	TGAGGATGCG GAGCGGCCCG GTGTCGAGCC GCCGGTAGAG	GTGATCICCG CGCCGGCGAC CGCCCAGGGC AGTTCCCTGA 10000	GCCCAGGIGG ACGCCGACCG AGCGGGCCGC GTCGAACICG 10080	GTGCCAGGGC CGCCGTGTGG GCGGCGACTC CCCCGGAGTC 10160	CCGCGCAGCC GGGTGCGGAC CGCCGTGGCG AGGCGTTCGC 10240	GGAGAGCGGG GGTGTCCAGG IGCGGACCGC CCTGGCGGTG 10320	CGGCGGGAC CCGCCAGACG CCCGCCCC CCGGCGCGGT 10400	GCCAGGGTCT TCGCCTCGGT GGCGGCGCTC AGCCCCGTCA 10480	GGTGGCCGCG ACGGTCGCGC CGGTGGAGGC GTCGGTGAGC 10560	GGCCCCAGCG CCGCCAGCG GCCAGCAGCA GTTCGGCGTC 10640	TCGGCGCGGT TGTACAGCTC GCCCGCCAGG AGCAGCCGGA 10720	CACGGCCGIT CCGCICCAGA GCGGGTACGC GGIGCCGICG 10800	cerreccese rrcsamera cceccesse cecceces 10880	start <i>oriopar</i> Aggregege egg <u>ear</u> egr gaad <u>regree red</u> aeggreg 10960	TAGGCCACCG GTACCTCGAT
CGCGATCTCG	TGAGGATGCG	GTGATCTCCG	GCCCAGGTGG	GTGCCAGGGC	CCGCGCAGCC	GGAGAGCGGG	сеесееевы	GCCAGGGTCT	GGTGGCCGCG	GGCCCCAGCG	TCGGCGCGGT	CACGGCCGTT	Secreces	start <i>orrspar</i> A—AGGTCGGGCCAT	TAGGCCACCG
ccargregee	cceraccee	ceressercs	rerececeer	cererccee	ceccrcccce	GCAGCGCCG	AGGCGGTCC	ceecrcerec	ceecereerc	AAGGCCCCGG	rccegrcage	GGCCCAGGGT	AAGCGGGGTG	TCCGTACACG	CTGGAAGTCG
9761 GGGACATCTC GTTGAGGCCG TCGAAGCCCG CCATGTCGCC	9841 CGGIGCATAC CGCCGAGCGG GAIGICGGCG CCGTACCCGG	9921 GGCGACGAGC GGCAGCAGGT ACTCCAGGAC CGTGGGGTCG	10001 CGAGTTCGGC CGAGTGGAGC CGGATCTCGC TGTGCGCGGT	10081 TCGGACACCT CGGTGCCCAT CGACACGGAC CGTGTCCCGG	10161 GATGCCGCCG GACAGGACGA CGGTGGGGGC CGCCTCCCCG	10241 CGACCAGGTC CACCGCCTCC CGTTCGCCGG GCAGCGCCCG	10321 ATGTCGGAGC CGCCGACTCC GTGCAGCAGG AGGGCGGTCC	10401 GIGGGIGCCG GACAGGCCCA GCGGCCGGCC CGGCICGTGC	10481 CGTCGCCGCG CAGCCACAGC GGTACCGAAC CGGCGTGGTC	10561 AGTGCGGCGA ACCGTCCGTT CAGGAGCCGG AAGGCCCCGG	10641 GCCGAGGGCG GCAGAGGAGC CGCCGAGCGC TCCGGTCAGC	10721 CCTGGCCGTC GGCGACCAGG ACGGGCGGAC GGCCCAGGGT	10801 TGCACGGGA CATGGGTCCC GCGGACGGCG AAGCGGGGTG	GCGGCCCTCG GTGCCGATGC GCACCCGGAA TCCGTACACG	4— end orfZpar TCAGATGGCC AGGGCGCGA AACCGCCGGA CTGGAAGTCG
GTTGAGGCCG	cecceaecee	GGCAGCAGGT	CGAGTGGAGC	CGGTGCCCAT	GACAGGACGA	CACCGCCTCC	CGCCGACTCC	GACAGGCCCA	CAGCCACAGC	ACCGICCGIT	GCAGAGGAGC	GGCGACCAGG	CATGGGTCCC	GTGCCGATGC	rzpar AGGGCGGCGA
GGGACATCTC	CGGTGCATAC	GGCGACGAGC	CGAGTTCGGC	rcggacaccr	GATGCCGCCG	CGACCAGGTC	ATGTCGGAGC	Greerecce	cercecece	AGTGCGGCGA	GCCGAGGGCG	ccreeccerc	TGCACGGGGA		
9761	9841	9921	10001	10081	10161	10241	10321	10401	10481	10561	10641	10721	10801	10881	10961

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REPLACEMENT SHEET

GGGAGCGCTG GTGTCCGAGG TTCTGGTACA GCTCGATCAG 11200 AGGCCCAGGC GCACGCCGT CTCGATGTCG GCGCTGTTGG 11280 11361 CCGTAGCCGA AGCTGGAGCA GCCCGCGGAG GTGAGGAATC CGTACGGCTG GTCGGACTTG GCGAAGAGCA CGCCGTAGTG 11440 11681 CAGCICCGGG AICGGGITGA CCICGGGGGC GACCCGGACC GIGGICITGG CCGGCCCCG CGTCCACAIG GAGGGGCGCA 11760 11761 GSTCCTCGGC GTAGTCGTAG CCGATCGCCA GGAGGAGGTC GGCGGGCCCG AAGATCTCGT CGAGGGCCGG GTGGCCGAGA 11840 12161 GAAGCIGGGA CCCACGGGCT CGAICCGGCT GIIGAGGACG GCGCIGICGA CGAGGIIGAC GAIGICCICG CCGCGIICGA 12240 11041 CGGCGCCCTT GGTGAGGGCG GCGAGCAGCG AGGTGCGGTC GGTGGCGGGG ACGCCTCGC AGCCGTTGGC CTCGGCGAGC 11120 11441 GCGGAAGAAG CCGATGTCGC TGACGAAGGT GCCGTTGTCG AGGACGGAGT TCATGCAGTC GATCACCTGG TGGACCCGCA 11520 11521 TGCGGTCCTC GTACTCGGTG GGGTCGGCGA GGAATTCGGC GACGCGGCG GCCAGGCCGC TGAGGTCGTG CCGGGTCTTG 11600 11601 GGGGCGAGGC CCGAGGTCGC GTCGTCGAGC GCGGTGACGA ATTCGGCGAC GTTGGTGACG ATGTCGATGT CGGCGCGGAA 11680 11921 GACGACGGG ATGTTCAGCC GCTCGGCGAG GGCGCGCAGG GCGTCGACGG CCCCGGCGCG GATGACGGCG CTACCGACGA 12000 12001 CGAGGAGGGG GITCICGGCC ICGCGCACCA GCICAGGGGC CTCGICGAGG CGGGCGCGCC AGICGGCGIC CAGGGCGIGG 12080 12081 GTGGCGGTGG CCCGGACCAG GGGGGCGTCG GTGGGGGTGC CGTTCAGCTC GGCGCCGAGG AGGTCGACCG GCAGGCTGAT 12160 11841 ATGCCGTCCA TGTAGCCGCT GATGGCGCCG TAGTTGAGCG GGTGGTCGTG CGGCAGGACG CCCTTGGCGG TGTAGGTGGT 11920 11121 TGGACGAAGT CGACGCTTCC GAAGCCGACG GCGGGGGCGT 11201 GCCGTTGCGG TCGTTGTTGA CGACGACCAT GACGATCGGC

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NEW SHEET

													(SEQ ID NO:16)
12320	12400	12480	12560	12640	12720	12800	12880	12960	13040	13120	13200	13280	13313
GCTGTCCAGG CACTGGTGGG TGACGTTGGG GTAGCAGTCG 12320	GGICCAGGGC GGAGGIGGG ACGCCGGIGG CCAGGIIGGI 12400	TTGGTGATCC GGGCGAGGAC GTCCGCCATC ACCCCGGCGG	12481 TGAACTCGTG CCGGGTCAGG ACGAAGTCGA GTCCTTCGAC CTCGTCGAAG AGAATGGCGG ACGCCTCCCG GCCGACGACG	GCATGGCTTT CGCGGTCGTG GTGCCCATGG AGATCTCCTT 12640	GCACCGGGCG GTGCGCACCG GGTGGCGCAC ACCGTGGGTG	12721 GTGGCGTTGC CACTGTGCGG ATCGCCTCTT GGCGGCGGTC GGACGCCCGG CTTGGACAGA ATGGGCAAGG CGCGTTCAAG	CGTCCGGCGC CGACGGTCTC CATCCGATTC CGTCCCCTTC	12881 CGTCCACCGA TCCGAGGAGA ATCCATGGAT GTCCTGGCCG CGTTGGAGCG CAAGCCCAGC CTGAATCTTT TCCCCATGA 12960	GACGCCGTCA ACCGCTATCC GTACTCCGAG ACCCCGGTGG	GTACTGCGAG GACCTGGCCA AGCGCTTCTT CGGGGCGCGC 13120	ACACCGTGCT GACCGCCCTG ACCCCGCCCG GCGGCGCGT	GTGACGATCT GCCGGGGCTT CGGCTACGAG GTCGAGTTCT	80
TTGGG	GGTGG	CCATC	TCCCG	CATGG	CGCAC	CAAGG	GATTC	TCTTT	CCGAG	TTCTT	ອວວວອ	ACGAG	70
TGACG	ACGCC	GTCCG	ACGCC	cecegreere erecent	GGTGG	ATGGG	CATCC	CTGAA	GTACT	AGCGC	ACCCC	CGGCT	
GTGGG	TGGCG	SAGGAC	ອອວອອເ	OI OI	SCACCG	SACAGA	GTCTC	ccago	TATCC	rescca	SCCCTG	REGULL	09
CACTO	GGAGG	00000	AGAAT	Start	GTGC	CTTG	CGACO	CAAGO	ACCGC	GACCI	GACCO	ອວວອ	_
TCCAGG	cagggc	TGATCC	TCGAAG	GGCTTT	ອວອອອວ	ອອວວວອ	ວອວອອວ	GGAGCG	CCGTCA	TGCGAG	CGTGCT	CGATCT	1 50
			CICG			GGAC		CGTT					
12241 GCTGGACGCT GAACTTGGTC AGCGGGCCCA TCACGGCGGT	12321 TACGACTCGG ACTGCGCGGC CAGCGCGATG ACCGAGCTGC	12401 CATGCCGGGG CCCAGGGTCG CGAAGCACGC CTGGGGGCGG	TTCGAC	12561 CCGAATACAT GGTCGACACC GTACTGGTGA AGACGTTCCA	12641 CGCATCGGAC GGGCGCCGGG ATGGCGCCCC GGAAAACGCG	GCGGTC	12801 GCATGGCGTC CATCGTCCTC GTGGCGCTTT TCGTGAAATC	TGGCCG	TCGCCGCGCG CCAGTGCCGC GCTGGCCACC	13041 CCGTCTACGG CGATGTCACG GGGCTGGCCG AGGTGTACGC	13121 CACGCCGGTG TGCAGTTCCT GTCCGGTCTG CACACCATGC	13201 CCTGGTCCTC GCGCCGAGG ACGCCGCCCA CTACGCCACG	1 40
A TCAC	3 ACCG	CTGG	A GTCC	A AGAC	GGAA	9099 :	r TCGT	GTCC	GCTG	3 AGGT	S CACA	A CTAC	ACT
399999	GCGAT	GCACG	AGTCG!	TGGTG	300000	CCTCT	SCGCTT	ATGGA	TGCCG	TGGCC	GGTCT	ಬಾತಿ	sagarcg 30
3 AGC	cago	GGA	3 ACG	GTAC	3 ATG	3 ATC	GTG	A ATCC	3 CCAG	9 6660	r GTCC	3 ACG	cree
CTTGGT(955555	AGGGTC(SGTCAG(GACAC)992292	rerece	GECCE	SAGGAGI)292922	rgtcac	AGTTCC	CGGAG	13281 TACCTTCGAC CGCCGGACAC CTGGAGATCG ACT 10 20 30
GAA(; ACT	7000 5	5000	GGT	999 ;	CAC	: CAT	TCC	TCG	; cGA	, TGC/	909	5000
SACGCI	ACTCGG	30000	TCGT	TACAT	CGGAC	GTTG	GCGTC	PACCG	GGCTG	TACG	CGGT	TCCTC	TCGAC
GCTG	TACG?	CATG	TGAAC	CCGA	CGCA	GTGG	GCAT	CGTCC	GAACC	CCGTC	CACG	CCTG	TACCI
12241	12321	12401	12481	12561	12641	12721	12801	12881	12961 GAACCGGCTG	13041	13121	13201	13281

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